

### REMARKS/ARGUMENTS

Claims 1-17 are pending in this application. Claims 1, 2, 7-9, 11, 13, 14, 16, and 17 have been amended. Support for the amended claims is found in the specification. No new matter has been added.

#### Rejections Under Section 102

Claims 1-17 were rejected until section 102(b) as being anticipated by U.S. patent 5,390,134 (Heikes). Reconsideration and allowance of the claims are respectfully requested for the following reasons.

As an example, claim 1 recites "adding the first mantissa, second mantissa, and an input bit together to produce a third mantissa and an output bit" and "generating the input bit based on the first mantissa, second mantissa, and output bit." Heikes does not show or suggest this feature of the invention. In Heikes, there is no input bit that is based on an output bit, which is a result of adding mantissas. The present invention provides an apparatus and method of adding floating point numbers and rounding in a fast and efficient way, and also consuming less area on an integrated circuit, which are not taught or suggested by Heikes. For at least this reason, claim 1 should be allowable.

Claims 2-6 are dependent on claim 1 and should be allowable for at least similar reasons.

Claim 7 recites "unpacking the first floating point number, having a first exponent and a first mantissa of X bits, to generate a second mantissa of at least X+K bits, wherein X and K are positive integers" and "unpacking the second floating point number having a third mantissa of X bits to generate a fourth mantissa of at least X+K bits." Heikes does not teach or suggest unpacking floating point numbers, especially where an initial mantissa has X bits and an unpacked mantissa has X+K bits. The present invention provides an apparatus and method of adding floating point numbers and rounding in a fast and efficient way, and also consuming less

area on an integrated circuit, which are not taught or suggested by Heikes. For at least this reason, claim 7 should be allowable.

Claim 8 is dependent on claim 7 and should be allowable for at least similar reasons.

Claim 9 recites "rounding the third mantissa by updating the input bit based on the output bit to produce a fourth mantissa." Similarly as discussed for claim 1 above, Heikes does not show or suggest this feature of the invention. Heikes does not show updating an input bit based on an output bit. For at least this reason, claim 9 should be allowable.

Claim 10 is dependent on claim 9 and should be allowable for at least similar reasons.

Claim 11 recites "producing a first carry bit from a second carry bit and from round control variables derived from the first mantissa and the second mantissa." Similarly as discussed for claim 1 above, Heikes does not show or suggest this feature of the invention. For at least this reason, claim 11 should be allowable.

Claim 12 is dependent on claim 11 and should be allowable for at least similar reasons.

Claim 13 recites "a carry logic circuit coupled to the input bit and generating the output bit." Similarly as discussed for claim 1 above, Heikes does not show or suggest this feature of the invention. For at least this reason, claim 13 should be allowable.

Claims 14-15 are dependent on claim 13 and should be allowable for at least similar reasons.

Claims 16 recites "generating the input bit using the output bit." Similarly as discussed for claim 1 above, Heikes does not show or suggest this feature of the invention. For at least this reason, claim 16 should be allowable.

Claim 17 recites "means for updating the input bit based on the output bit." Similarly as discussed for claim 1 above, Heikes does not show or suggest this feature of the invention. For at least this reason, claim 17 should be allowable.

Rejections Under Section 112, Second Paragraph

The claims have been amended to address the examiner's section 112, second paragraph rejection.

Furthermore, although applicant provides numerous embodiments in the detailed description, applicant intends the scope of the invention to be defined by the claims. It should be readily apparent to those of ordinary skill in the art that changes and modifications to the embodiments described in the form and details may be made without departing from the scope of the invention.

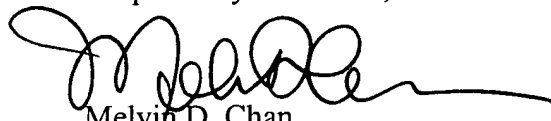
Moreover, the aspects of the invention, as recited in the claims, are shown in the drawings. For example, shifting as the mantissas of claim 11 is shown in figure 4.

CONCLUSION

In view of the foregoing, applicant believes all claims now pending in this application are in condition for allowance. The issuance of a formal notice of allowance at an early date is respectfully requested.

If the examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400, extension 5213.

Respectfully submitted,

  
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